

NOCA Mountain Lakes Fisheries Management EIS

Public Comment Summary Report

06/05/03

NOCA Mountain Lakes Fisheries Management EIS

Public Scoping - Interim Comments Report

Number of Documents: 30
Number of Comments: 248
Substantive: 96.0%
Non-Substantive: 4.0%

| <u>Topics & Issues</u> | <u># of Comments</u> |
|---|-----------------------------|
| Alternatives | |
| Alternative A (No Action) | 3 |
| Alternative B | 5 |
| Alternative C | 1 |
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|--|----|
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| <u>State of Origin</u> | <u># of Documents</u> | <u>% of Total</u> |
|-------------------------------|------------------------------|--------------------------|
| MT | 1 | 3.33% |
| WA | 25 | 83.33% |
| Unknown | 4 | 13.33% |

| <u>Country of Origin</u> | <u># of Documents</u> | <u>% of Total</u> |
|---------------------------------|------------------------------|--------------------------|
| USA | 30 | 100.0% |

| <u>Source of Comment</u> | <u># of Documents</u> | <u>% of Total</u> |
|---------------------------------|------------------------------|--------------------------|
| Business | 1 | 3.33% |
| Individual | 22 | 73.33% |
| Organization | 6 | 20.0% |
| Tribe | 1 | 3.33% |

NOCA Mountain Lakes Fisheries Management EIS

Public Scoping - Substantive Issues Report

Topic: Alternatives

Alternative A (No Action)

*"Washington Outfitters and Guides Association would like to go on official record of supporting Management Alternative A. No Action, or Continued Management and supports maintaining a fishery in the 40 specified lakes in the North Cascades National Park and the 12 stocked and 7 reproducing lakes in the National Recreation Area that now have fish." **Organization - Washington Outfitters and Guides Association NOCA-014 B***

*"The 40 lakes of the North Cascades complex currently being managed for fish represent about two percent of the 1800 lakes in the high lake fishery being managed for higher quality, low density fish stocking. Although this may seem to be a small percentage, it is a significant percentage as the North Cascades lakes provide some of the highest quality surroundings. Adoption of Alternative B would raise this percentage to about 5.7%. More importantly, it would add over 60 outstanding quality lakes to the opportunities in this high lake fishery statewide." **Individual NOCA-012 G***

Alternative D

*"The flip side presents the danger in adopting Alternative D- No Stocking. There is a small percentage of citizenry who disdain authority and will defy regulations. There is a significant probability that a no-stocking policy will result in increased illegal fish stocking. The worst case is where improper fish species are then introduced to lakes where they can reproduce and create even greater biological impacts than maintenance of a low-density recreational stocking program would ever have." **Individual NOCA-012 M***

Alternatives Eliminated

*"Stocking fish in more mountain lakes should be an alternative considered, but eliminated from detailed analysis because of the NPS mandate." **Individual NOCA-025 D***

New Alternatives or Elements

*"What are the effects on Wilderness of each Alternative?" **Individual NOCA-022 B***

*"Let the wilderness be wild, let the high Alpine lakes or all the lakes in the wilderness live and evolve on their own without human fish stocking" **Individual NOCA-018 A***

*"federally designated wilderness areas should provide opportunities for research in as natural a system." **Individual NOCA-024 D***

*"In support of the objective, I recommend that the plan require discontinuing stocking in both Park lakes and NRA lakes, or least those lakes within the Stephen Mather Wilderness, as well as removal of nonnative fish stocks from those lakes. I believe that this should be one of the proposed alternatives. This alternative will provide opportunities for research in as natural a system and will conserve native biological integrity, while having negligible effect on sport fishing opportunities, which will continue throughout the remaining mountain lakes in Washington's Cascades." **Individual NOCA-024 E***

"Similarly, EIS alternatives for other forms of fish stocking should be considered." **Individual NOCA-025 C**

"Finally, the EIS analysis of recreational opportunities and the economics of sport fishing in mountain lakes should consider the stocked lakes on adjacent USDA Forest Service federally-managed lands, and not be restricted to just the North Cascades NPS Complex as proposed." **Individual NOCA-025 O**

"In addition, remove over populations of fish in lakes that have reproduction." **Individual NOCA-009 D**

"Continued stocking of mountain lakes diminishes those lakes as natural laboratories." **Individual NOCA-024 C**

"Among the usual consideration in the economic section of the EIS, this assessment should consider the cost of adaptive management, as well as implementation and effectiveness monitoring." **Individual NOCA-025 J**

"My belief is that any lake in the NCNP with a past stocking history should be allowed to be planted with fish on a continuing basis under the management of the Washington Department of Fish and Wildlife." **Individual NOCA-004 A**

| <i>"Fishing Potential</i> | <i>Number</i> | <i>Comment</i> |
|---------------------------|---------------|--|
| <i>NP = None</i> | <i>11</i> | <i>Lakes and ponds having no recreational fishing potential because they are very small or do not have a history of successful fish survival after stocking. Some, if not many, of these lakes provide excellent refuges for species typically preyed upon by fish. One of these lakes (Next) is on the MOU.</i> |
| <i>PP = Poor</i> | <i>27</i> | <i>Lakes and ponds having poor recreational fishing potential because they are small beaver ponds or having a history of being marginal fish producers. Two of these lakes (Sweet pea and Torment) are on the MOU.</i> |
| <i>FP = Fair</i> | <i>26</i> | <i>Lakes and ponds having fair recreational fishing potential because of their fish survey history or are relatively large lakes and probably could support a fair fishery. Seven of these lakes are on the MOU.</i> |
| <i>GP = Good</i> | <i>41</i> | <i>Lakes and ponds having good recreational fishing potential because of their fish survey history or are relatively large lakes and probably could support a good fishery. Thirty of these lakes are on the MOU."</i> |

Organization - Trail Blazers, Inc. NOCA-027 AH

"Assess the environmental impacts of fishing activities in sensitive, high mountain riparian areas, such vegetation trampling, soil erosion, garbage (including fish tackle) left behind." **Organization - Kettle Range Conservation Group NOCA-003 B**

"Stock use does make access easier for visitors so people who would not or could not hike or backpack to the lakes are able to visit." **Business - Icicle Outfitters & Guides, Inc. NOCA-002 B**

"I recommend that every EIS alternative for the future management of mountain lakes that allows fish to exist be made contingent upon effectively eradicating fish populations where they are not desired. For adaptive management to be effective there must be some consequences if the management actions are not taken or effective within the allocated timeframe. For example, if the WDFW and interest groups currently working with the NPS on the EIS do not assist in implementing a future management plan, then the NPS should retain the option of eliminating all fish." **Individual NOCA-025 N**

"Lakes that have been rehabilitated to fishless conditions may require reintroduction of certain aquatic species in order to achieve full recovery of extirpated biota. For lakes that have been rehabilitated, Trail Blazers support the reintroduction of fish that would have less impact on the lake ecology. Trail Blazers support, and would be willing to assist in collection and transfer of invertebrates from fishless lakes in cooperation with NOCA biologists." **Organization - Trail Blazers, Inc. NOCA-027 Z**

"Some of the lakes in the MOU do not hold fish. I suggest that a few trades be made for the lakes that do not hold fish. Of the 103 lakes that do hold fish this could be done." **Individual NOCA-001 H**

"What are the impacts of planting non-native fish raised in a controlled environment and with antibiotics into the most pristine environments remaining in the United States?" **Organization - Kettle Range Conservation Group NOCA-003 C**

"The various EIS alternatives should reflect or emphasize different interests an associated management options, and not be displayed as joint objectives. For example, the NPS should not stress the spectrum of recreational opportunities any more than its other land management responsibilities such as existing laws and regulations. What about the NPS mandate of "unimpaired" or the Wilderness Act? These were never mentioned at the scoping meeting, and yet they should play a major role in guiding any future NPS management. While the NPS should be as collaborative, as possible, it can not appear to be abdicating its management authority and responsibilities to others." **Individual NOCA-025 G**

"Count me among the Washington State residents who believe that the NCCPS should live up to their word. Look for ways to enhance people enjoyment of the out of doors." **Individual NOCA-023 C**

"Look for ways to enhance our failing recreation and tourism industry." **Individual NOCA-023 D**

"Physical and chemical criteria help to assess change in basic lake parameters. Protecting native biota provides a contrast to the first two. What seems to be missing is the "natural recreation opportunity criterion." This would tend to provide a more proper balance to NPS management policies." **Organization - North Cascades Conservation Council (NCCC) NOCA-028 T**

"To represent the full spectrum of alternatives to be considered, a fifth alternative should be added. Discontinue stocking in all Park and NRA lakes." "While some may consider this draconian, in conflict with legislation, etc. it is an appropriate sideboard Alternative and it is consistent with the evolution of NPS management for all areas under its jurisdiction as noted in the White Paper." **Organization - North Cascades Conservation Council (NCCC) NOCA-028 U**

"He wondered if the EA could say that if there is any vegetation or ground disturbance, then a cultural resources survey will be triggered. I said I would pass this comment on to you." **Tribe - Swinomish Tribe NOCA-029 A**

"Consider options for fishery management-size limits, possession limits, regulations, - 'tools'" **Individual NOCA-030 I**

"Maintain or restore native species. Support native species." **Individual NOCA-030 B**

"Add/integrate wilderness objectives-untouched/untrammled." **Individual NOCA-030 C**

"Ensuring research data is made available for other questions/issues, etc. Long-term management, archiving of data." **Individual NOCA-030 D**

"Educational value (especially to young) of recreational fishing/exposure to outdoors." **Individual NOCA-030 J**

"Need an alternative that captures the "right" lakes for fishing and for minimizing fish impacts." **Individual NOCA-030 BE**

"Use recreation areas as transition zones." **Individual NOCA-030 Y**

"Consider 'variability' in conditions-time of year of studies, etc." **Individual NOCA-030 AG**

"Information on which lakes are wilderness vs. non-wilderness (as opposed to information only on Park vs. NRA)" Individual NOCA-030 R

"If stocking lakes, consider ability of lake to support fish and target those-be flexible. Can present non-stocked lakes be swapped with stocked lakes to provide different visitor experiences in different areas?" Individual NOCA-030 AD

"Consider ease of access and visitor use patterns." Individual NOCA-030 AC

"Consider/balance the size of fish and catch rate for angler satisfaction." Individual NOCA-030 AB

"Variation between Alternatives B and C needs to consider Wilderness designation, which tends to include high, remote, rugged lakes." Individual NOCA-030 AO

"Consider possible consequences to other species from removing fish (loons, otter)." Individual NOCA-030 W

"Decide on management goals for areas or individual lakes-“transition” areas that allow some impact, other areas where no impact should occur." Individual NOCA-030 V

"Activities and satisfaction include various recreational activities-evaluate the dichotomy of anglers vs. non-anglers-it is too simple." Individual NOCA-030 BC

"How to consider needs of other valued species (loons) related to fish populations." Individual NOCA-030 T

"Consider Forest Service lakes on recreational and economic basis-can the same opportunities be found elsewhere (outside of Park)?" Individual NOCA-030 BD

"Stratify lakes to be stocked so there are representative lakes in ecological classes, for example, so that not all deep lakes are stocked." Individual NOCA-030 AP

Topic: Consultation and Coordination

General Comments

"I encourage you to continue to work effectively with the WDFW. The WDFW has done an under-appreciated, superlative job over the years of managing this fishery. Their lake-by-lake approach that stresses the creation of low-density, non-reproducing fish populations in alpine lakes could, and should, be a model for all wilderness land managers across the country. Listen to your colleagues at the WDFW, they know and understand a great deal." Individual NOCA-011 A

"I feel that the NCNP should continue to allow the stocking of fish in the lakes with a history of fish stocking and continue to work with Washington Department of Fish and Wildlife." Individual NOCA-006 B

"The staffs of NCNP and the Washington Department of Fish and Wildlife, working together, partnering and cooperating should already be stocking those lakes in the NCNP with a history of fish or fish stocking. Thus, bringing both agencies together to maintain and improve the quality of life in Washington state (and the nation) for the people it serves." Individual NOCA-019 A

"NPS should continue to participate with the State and stakeholders in dialogue after plan is completed (an action common to all alternatives)." Individual NOCA-030 AF

Topic: Effects on Non-fish Species

Regulations, methodologies and assumptions

"Since the impact of non-reproducing trout on zooplankton is not measurably significant (Liss and Larson, III), the proposed fishery would have no measurable impact on the distribution of zooplankton. Analysis at the cluster and landscape level, then, seems more appropriate with regards to amphibians, especially salamanders. The HI-Lakers support further research and suggest that historically fishless lakes that also have no salamanders be studied to determine whether abiotic factors make them unsuitable habitat for salamanders, and whether any of the 103 lakes with a history of fish share those same factors. We would also recommend further study of the relationship between larval abundance and TKN and the TKN benchmark at which trout affect larval abundance. Tyler (1998) puts that benchmark at 0.095 mg/L, whereas Liss et al (Phase III 2002) put that benchmark at 0.055 mg/L. The sample sizes were relatively small, 7 and 4 Lakes, respectively, and further research might clarify the relationship between larval abundance, TKN, and non-reproducing trout. That information might then help biologists determine which of the 103 lakes with a history of fish to include in the proposed fishery."

Organization - Washington State Hi-Lakers NOCA-026 H

"Appendix A shows that only 21 of the 35 sixth level HUC basins in the NOCA Complex are being stocked with fish or have introduced reproducing fish. Appendix A also shows that out of the total HUC basin area of 1,462 square miles, basins with lakes stocked under the MOU represent 704 square miles while the total area of basins with stocked or reproducing fish is 855 square miles. This means that only a little more than half the basin area in the NOCA complex is managed for fish. Appendix A also shows the locations by basin of the 90 lakes in Appendix B that are considered to have potential for recreational fishing. Trail Blazers believe these statistics show the existence of a large number of fishless lakes and ponds for aquatic biota and a large number and area of fishless basins for amphibians under the present NOCA Complex fish management policies. Furthermore, Trail Blazers are not aware of any data that show amphibians or macro-invertebrates are threatened at the landscape level in NOCA."

Organization - Trail Blazers, Inc. NOCA-027 U

"Apparently, the potential for such impact is limited to a very few low-elevation lakes providing habitat for resident loons or otters, and the Hi-Lakers recognize that the Park may consider different criteria and objectives in managing those lakes. It seems reasonable that the magnitude of the impact would depend upon many variables, including the reproductive status of the fish. Removing a reproducing population of brook trout might have a pronounced impact on resident loons and otters, but replacing the brook trout with native rainbow might mitigate the impact."

Organization - Washington State Hi-Lakers NOCA-026 G

"Appendix A shows the 6th level hydrologic unit code (HUC) basins in the NOCA Complex together with a count of the total numbers of lakes and ponds in the HUC and the numbers of lakes managed for fish both stocked (MOU lakes) and naturally reproducing. The total number of lakes in Appendix A only adds to 530 because springs and wetlands that have been assigned water codes by NCNP were not counted, also the number of small ponds is being revised as new information becomes available."

Organization - Trail Blazers, Inc. NOCA-027 T

Topic: Effects on Riparian Zone of Lake

Effects on shoreline vegetation

"At the same time, while I do not have current Park backcountry-use literature before me, in the past I have felt that Park cross-country instructions were insufficiently detailed and forceful if we are to prevent individuals and groups from creating trails in to trailless peaks and lakes, and developing campsites in sensitive areas (esp. near lakeshores). Direct and forthright communication from your office to the HiLakers and Trailblazers on your rules and recommendations on off trail conduct, particularly in lake environments, could help convince our entire membership of the imperative need to do their utmost to see that no trace is left of their visit."

Individual

NOCA-013 B

"Most of these Lakes that contain stocked fish, are in remote areas less often visited by humans and usually a Hiker that doesn't fish, will not circle the entire Lake and a fisherman will most often bring a lightweight raft to further lessen impact on the lake shoreline." Individual UNOCA-015 C

"Fully assess the role of recreational fishing and its impacts on lakeshores and stream banks. The amount of effort spent in studying these impacts is inadequate. The degree to which patterns of fishing versus other recreational pursuits affect lakeshores is not documented. The NPS readily notes that it lacks information on the number of visitors who visit these aquatic systems for fishing although it does have limited information from its permit system on overnight use and some day use." Organization - North Cascades Conservation Council (NCCC) NOCA-028 B

"Assess the need for and feasibility of restoration of lake shore habitats where degraded by fishing and other recreational activity." Organization - North Cascades Conservation Council (NCCC) NOCA-028 F

"Clarify extent of trampling: problem or not? Use another work: foot impact, stock." Individual NOCA-030 G

Effects on trails and riparian zones from non-anglers

"Part of the solution is education. Here is where the additional resources of WDFW, the media, and citizen recreational fishing groups are vital. If people know that NOCA and WDFW are working cooperatively to maintain an excellent recreational fishing program in the complex, they will be less tempted to take matters into their own hands." Individual NOCA-012 L

"Dave took the same measures of soil compaction and vegetation disturbance that he took at the campsites he studied during the summer (he compared the number of visitor nights to the degree of impact at these sites). When he compared the amount of vegetation and soil affects during one day of horse impact to the same amount of human usage he concluded the horse did the impact of 85 people." Individual NOCA-005 C

"The effect of the horses is not in the least subtle; it is extremely unaesthetic, they "trample" the vegetation into dust, pollute all the water so that no one can safely drink it without boiling or filtering, and leave piles of stinking defecation everywhere. If you want to do any one thing to improve and maintain the natural environment of the NOCA, stop allowing all horses!" Individual NOCA-005 B

"because in my opinion horses are the most significant cause of "trampling" damage. I mentioned that I had heard of a study that was done that showed that horses caused more damage than people by 2 orders of magnitude." Individual NOCA-005 A

"The only time horses would ever enter the riparian zone is when trails hug the shoreline. When stock users enter a lake basin and stop for any amount of time, the stock are taken away from the shoreline. When possible, the animals are highlined and hobbled back in the trees or on hardened ground well away from camps or other areas where people are likely to visit. The only direct impact the stock might have on the lake and it's shoreline is the nutrient deposit from manure and urine that may be dropped on the trail and most commonly in the highline area at least 100 or 200 feet from the shoreline." Business - Icicle Outfitters & Guides, Inc. NOCA-002 A

"Which brings me to an aside comment, that as an avid hider (going to 70 to 100 lakes each year), the most significant abuse that I have seen over and over is the damage done by horses. If you really want to reduce impact in the park, stop allowing horses!" Individual NOCA-009 E

"Consider impacts from other than fishers" Individual NOCA-030 AT

Regulations, methodologies and assumptions

"Trail Blazers disagree with the Overnight Use Near Park Lakes with Fish statistics developed using Cross Country Zones. Many of the zones do not take into account the difficulty in moving from one side of the zone to the other. For example the statistics showing an average of 34 persons using Diobsud lakes and Hi Yu lake does not take into account that the lakes are separated by rugged terrain on Bacon Peak. Trail Blazers members stock both of these lake basins and have climbed Bacon Peak and from personal experience, it is safe to say that very few people have ever made the traverse between the lakes. Hence the numbers of users at each lake would be about half of the 34 estimated even if all visitors went to the lakes. Similarly Doug's Lake is separated from the Quills and Triumph Lakes by Triumph Pass and is a much longer trip, hence person visits to Doug's Lake would be a small fraction of the visits to the Quills. Trail Blazers strongly recommend that lake use statistics be based on cross country zones that are defined to better take into account the rugged terrain and the natural routes that visitors normally follow; as well as, differentiating between visits to zones vs. visits to lakes." **Organization - Trail Blazers, Inc. NOCA-027 R**

"The natural attractiveness of high lakes and their scenic surroundings often lead to overuse, even when fish are not present (Parametrix, Inc. 2001. A report on the Washington Department of Fish and Wildlife's High Lakes Fishery Management Program. Pages 5-64 through 5-67 and Plates 38-40). Heavy damage to the shoreline around fishless lakes proves that it will be challenging to allocate shoreline impacts to one user group or another at lakes that contain fish. The chart in the preliminary scoping materials of overnight use according to zones, which makes no distinction between anglers and others at a lake, photographers in a nearby meadow, and climbers half a mile away, offers little insight into activities at individual lakes. Our own experience is that damage from overuse correlates much more closely to proximity to the trailhead and the use of horses than to the presence of fish. The Park might prevent further damage by initiating a public education program, encouraging anglers to use inflatable rafts (many Hi-Lakers do so already), or restricting travel and stock on riparian zones while they recover, much as it does with camping areas. The Hi-Lakers recognize that such an education program and some restrictions might be options considered in the adaptive management strategy." **Organization - Washington State Hi-Lakers NOCA-026 F**

"Trail Blazers agree that trampling due to anglers, hikers, climbers and horses can negatively impact shorelines and support education and closures of sensitive lake areas to walking and camping at more heavily used lakes. Trail Blazers have cooperated with the Forest Service to develop trailhead signs that educate and encourage all users to travel light on the land. Approximately three fourths of the lakes not in the Recreation Areas that can be stocked under the current MOU with the WDFW have no trail and are difficult to reach because of distance and rugged terrain. Hence these lakes (like Diobsuds, No Name and Skymo) receive relatively few visitors during a season for any recreational activity and impacts to the riparian zones are minimal, and usually undetectable." **Organization - Trail Blazers, Inc. NOCA-027 Q**

"The Hi-Lakers agree that heavy and prolonged use can damage riparian zones (as well as meadows and other areas) and that those fragile zones should be protected from overuse. However, we doubt that anglers are necessarily or even primarily responsible for the damage. Research in the Alpine Lakes Wilderness has shown that only about 40% of those visiting lakes actually fished and that non-anglers spent just as much time at the lakeshore as anglers (Hendee, John C., Roger, N. Clark, and Thomas E. Dailey. 1977. Fishing and other recreation behavior at roadless high lakes; some management implications. Res. Note PNW-304. Portland, OR: US Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station. 27p)." **Organization - Washington State Hi-Lakers NOCA-026 E**

"Since impacts to the riparian zones most likely depend on ease of access to lakes rather than the specific use that a visitor makes of the lake, Trail Blazers support managing lakes currently with no trails in a trailless category. Since there is little known about the specific causes or extent of riparian zone impacts, Trail Blazers support conducting further research in this area." **Organization - Trail Blazers, Inc. NOCA-027 S**

"The logic of constructing trails is to place them where they will do least damage. Trails that grew out of early

use often followed terrain of least difficulty, many times through sensitive meadows and wetlands. New trail construction in the last three decades has substantially focused on relocating trails in a manner that minimizes impact to sensitive areas, even though the cost of trail construction is higher in difficult and steep terrain. The rerouting of the Cascade Crest Trail from Snoqualmie Pass to Waptus Lake is an example. The new route follows a higher elevation and more scenic route that avoids the lower river valley routes of the original trail."

Individual NOCA-012 I

Topic: General Assumptions Used for Analysis

General Methodology for Establishing Impacts/Effects

"I would like to make a suggestion: you might be well advised to eliminate the use of these 'zone visits' altogether, but if you think the data useful, then you must at least reorganize the table. You need to eliminate the leftmost column altogether since there is no known relationship between the statistics and lake visits. Then the table would present the data as it really is; that is, visits to zones for any purpose. Then, if desired, one could add explanatory notes that would indicate that it is a reasonable assumption that some of these visits are likely to include visits at least some of the lakes in that zone; but that there is no way to quantify such lake visits. Since I assume the EIS documentation will somewhere table of the lakes in the park, you could also add a column to that table which would indicate in which zone that lake exists. In this manner the reader could see what's known(zone visits for any purpose); then, if interested, could look up which lakes were in each of those zones; and then make their own guesses about lake visits." **Individual NOCA-011 C**

"Management of takes should be on a lake-by-take basis. Thus, a take (or lakes) that are in the 1988 MOU may not warrant stocking, and lakes that were stocked but now are fishless (not in the 1988 MOU) may warrant stocking." **Individual NOCA-017 C**

"It is my opinion that the data in that table is presented in a very misleading way. As is, this table might actually distract from the completeness of the final EIS. I appreciate the title of the table includes the word "Near" but this does not excuse the overwhelmingly wrong impression the basic structure of the table creates by making it appear that the numbers presented are in some fashion indicative of actual visits to lakes. It is my understanding the these statistics are gathered from wilderness permits that give you information about how many person-days visit defined cross-country zones or camps. The problem is that the way the table is laid out; in particular that the primary column at the far left lists the lakes that exist in each of those zones. It would be a reasonable assumption, by even the careful reader, that the number of visits presented in the table indicate visits to, or very close to, those lakes. This is simply not true - not even remotely true." **Individual NOCA-011 B**

"Trail Blazers strongly support the identification of important basic parameters, the accurate identification of the spatial locations of field observations and sampling stations, and the collection and analyses of observations and samples using the best available protocols. Historical data should be included and qualified as to the methods used. For management we support the concept of a data centered approach where basic data are structured using modern database and geographic information system tools and techniques." **Organization - Trail Blazers, Inc. NOCA-027 AB**

"Trail Blazers understand that the mountain lakes do not exist in isolation from nearby ponds, seeps, wetlands, snow and ice fields, inlets, outlets and downstream reaches and adjacent riparian areas. Therefore Trail Blazers believe that all the waters in the lake basins together with species migrating in and out of the basins and pollution from sources miles away should be studied as a system." **Organization - Trail Blazers, Inc. NOCA-027 C**

"I strongly encourage you to use scientific methods in selecting which lakes to plant and which species of fish to use." **Individual NOCA-009 C**

"Trail Blazers support the basic concept of protecting and maintaining native species abundance and viability in an ecosystem. Trail Blazers understand certain non-fish species in NOCA Complex mountain lake basins are

sensitive and have been or could be impacted by the stocking or introduction of fish during the last 100 years (where introduction is defined as fish stocked once that are now able to sustain themselves through natural reproduction). Trail Blazers also understand certain fish species in downstream reaches from NOCA Complex mountain lakes could be sensitive and impacted by fish migrating or entrained out of mountain lakes. Therefore Trail Blazers support examining the existing and future data on a lake by lake basis and associated ponds, waters and downstream reaches to determine if there is a reasonable potential for fish to impact other species of concern either in the lake basin or in downstream reaches. Furthermore Trail Blazers would support removing any lakes and ponds from fish management where data show the fish are causing a harmful and irreversible (or unmanageable) effect on sensitive species." **Organization - Trail Blazers, Inc. NOCA-027 F**

"Trail Blazers support the concept of analyzing mountain lakes in conjunction with related bodies of water and the adjacent landscape. Trail Blazers developed a database to help them manage their volunteer fish stocking activities with the WDFW. The database recognizes that the lakes are connected through a surface and groundwater hydrology, hence the database defines lake and stream reaches and their connections. These reaches are then organized into a hierarchy using the eight level USGS binomial system consisting of: Region, Sub-region, Basin, Sub-basin, Watershed, Subwatershed, Catchment, and Sub-catchment. A Reach is the smallest unit and is defined at this time to be the same as a Sub-catchment. Future versions of the system defined at the 1:24,000 scale may provide a ninth or even tenth level for use. This structure allows water related data to be analyzed at any of eight levels of hierarchy. Trail Blazers recommend that the NOCA Complex data management system be organized by a hydrologic hierarchy so that data can be analyzed at any of 8 or more levels."

Organization - Trail Blazers, Inc. NOCA-027 J

"Trail Blazers strongly agree that decision making needs to be made at multiple spatial scales; however, there can be confusion over what ecosystem scales should be used in making any single decision. For example, the following table shows various scales based on USGS hydrologic unit definitions.

| | |
|---|--|
| 1 | A lake |
| 2 | A USGS 8th level basin (subcatchment). These are not yet defined for the NOCA Complex but would be approximately the scale of a lake basin or EPA/USGS river reach at the 100k map scale (example Wild Lake drainages) |
| 3 | A USGS 7th level basin (catchment) which are now being defined for the NOCA Complex (example Goodell Creek-above and including Crescent Creek) |
| 4 | A USGS 6th level basin (subwatershed) which have been defined for the NOCA Complex (example Goodell Creek), |
| 5 | A USGS 5th level basin (watershed) which have been defined for the NOCA Complex (example Skagit River from Alma Creek to Gorge Lake drainages) |
| 6 | A USGS 4th level basin (subbasin) which have been defined for the NOCA Complex (example Skagit River from Baker River to Canadian border) |

Trail Blazers understand there is no evidence for native fish species in high mountain lakes isolated by physical barriers from the ocean after the last ice age, including all lakes in NOCA outside the NRA. However if a 5th level basin ecosystem scale is used, it could be argued that trout native to the Skagit River below Gorge lake would also be native to Goodell Creek and Wild Lake. Another example of the importance of considering ecosystem scale is the likely existence of natural refuges for the re-colonization of semi-aquatic species, and even aquatic species, that exists at the catchment level (USGS 7th level basin) which would not be obvious if one restricts one's view to a lake in isolation." **Organization - Trail Blazers, Inc. NOCA-027 I**

"The fourth objective could have adaptive management imbedded in it, but it is currently ambiguous. Adaptive management criteria are mentioned on page 3 and again in Alternative B and D on page 4, but it is not mentioned in the objectives. There are several adaptive management models including those suggested by the U.S. Fish and Wildlife Service and National Marine Fisheries Service, USDA Forest Service, etc. What model does the NPS propose to use? Who will implement it, when, how, etc.? I recommend that any adaptive management model contain both implementation (of the management plan) and effectiveness monitoring. I have developed a model

for hydroelectric projects that may be applicable." **Individual NOCA-025 H**

Stocking Trends and Assumptions

"The NPS places an inordinate amount of confidence in its "science." Science contributes, to be sure, but one statistically significant finding regarding amphibian larvae in a few stocked versus not-stocked lakes does not a conclusion make relative to effect of stocking on such system." **Organization - North Cascades Conservation Council (NCCC) NOCA-028 J**

"The 40 lakes of the North Cascades complex currently being managed for fish represent about two percent of the 1800 lakes in the high lake fishery being managed for higher quality, low density fish stocking. Although this may seem to be a small percentage, it is a significant percentage as the North Cascades lakes provide some of the highest quality surroundings. Adoption of Alternative B would raise this percentage to about 5.7%. More importantly, it would add over 60 outstanding quality lakes to the opportunities in this high lake fishery statewide." **Individual NOCA-012 G**

"Assess the NCNPC lakes as scientific reference areas for other management agencies in other parts of the Cascades. Discuss role of NPS policies in light of the broader Cascades ecosystem. As directed by Congress the Park is to be kept in Wilderness and pristine condition and the surrounding National Forests are managed for multiple uses." **Organization - North Cascades Conservation Council (NCCC) NOCA-028 G**

"Trail Blazers support the addition of a management plan objective that provides participation by interested parties. For example: To coordinate and cooperate with relevant fish and wildlife agencies and public interest groups. Trail Blazers have demonstrated over the decades that a group of dedicated, organized and trained people can provide valuable help in mountain lake fish management. Trail Blazers take great pride in their service over the last 70 years in helping the state manage mountain lake fisheries. The Trail Blazers database show 7,088 person-stocking trips (number of stocking trips performed by Trail Blazers times the number of persons on trip) from 1934 to 2002. The database also shows 4,360 person-survey trips (number of survey trips performed by Trail Blazers times the number of persons on trip). Trail Blazers also have worked closely with the WDFW on a variety of projects including: facilities equipment and maintenance, egg taking, and database development and update. Of course, Trail Blazers and WDFW have also learned that training and monitoring must be an integral part of the participation and that much participation is most efficient, effective and reliable when done as a group rather than as individuals." **Organization - Trail Blazers, Inc. NOCA-027 L**

| <i>"Physical/Chemical</i> | <i>Trail Blazers Comments</i> |
|----------------------------|--|
| <i>Chemical properties</i> | <i>A suite of chemical field parameters and samples for laboratory analysis should continue to be monitored to help understand how the lakes are changing as a function of time. Cooperative research with agencies such as USGS and EPA should be carried out to determine effects of human activity in the Puget Sound basin on high lake chemistry.</i> |
| <i>Water temperature</i> | <i>Temperature depth profiles should be a part of all lake surveys.</i> |
| <i>Ice Cover</i> | <i>Periods of ice cover should be tracked on an ongoing basis using data from lake surveys and air and satellite photos.</i> |
| <i>Weather/Climate</i> | <i>Weather and climate models similar to those used by the Forest Service should be used to better understand the microclimates on a 6th or 7th HUC level.</i> |
| <i>Outlets</i> | <i>Outlet substrates, flows and barriers (or lack of) should be identified for all lakes being managed for fish.</i> |
| <i>Depth</i> | <i>Bottom contours of the larger lakes should be developed. At least maximum depths and amount of fluctuation should be determined for all lakes and ponds.</i> |
| <i>Area</i> | <i>Maximum and minimum surface areas for many smaller ponds need to be determined.</i> |
| <i>Substrates</i> | <i>Littoral substrates and aquatic vegetation surveys and monitoring should be continued.</i> |
| <i>Riparian Vegetation</i> | <i>Plant surveys should be continued and expanded to determine trees, shrub and herb composition. Riparian research should be coordinated with the on-going Forest Service</i> |

| | |
|-------------------------|---|
| | <i>Northwest Forest Ecology research.</i> |
| <i>Spawning habitat</i> | <i>Spawning habitat and potential should be determined on a lake by lake basis through survey observations of inlets, outlets, and springs"</i> |

Organization - Trail Blazers, Inc. NOCA-027 AE

"The North Cascades complex holds a significant fraction of the high lakes resource. Statewide, about 4700 lakes and ponds are classified as high elevation. A significant fraction, about 40%, are purposefully left fishless, either unsuitable for fish (e.g., too shallow) or as refugia for native biota. Another 40% (about 1800 lakes) are managed for fisheries by either aerial or hand stocking. The remaining 20% have reproducing fish populations and do not require stocking. WDFW is considering rehabilitation of some of the lakes with reproducing populations, as these lakes do not provide a quality fishery (the fish tend to be stunted) and the fish population densities at all trophic levels have a significant impact on the entire food chain and native biota." **Individual NOCA-012 F**

"While it is true that any introduction of fish will have an impact on the natural trajectory of a lake, just as any human footprint will have an impact on the natural trajectory of a meadow, our understanding of current research is that low-density stocking of non-reproducing fish into lakes with a history of fish will have no measurable impact on the biological integrity of the mountain lake ecosystem." **Organization - Washington State Hi-Lakers NOCA-026 C**

| <i>"Maintaining the Fishery</i> | <i>Trail Blazers Comments</i> |
|---------------------------------|--|
| <i>Density of stocking</i> | <i>Stocking density needs to be determined on a lake-by-lake basis using a number of factors related to reproduction potential and productivity. Figure 4 in Reference 1 shows that knowledge gained by WDFW through surveying has reduced the average stocked density from thousands/acre from 1933 to 1950 to a hundred/acre or less by the early 1980s.</i> |
| <i>Frequency of stocking</i> | <i>Stocking frequency needs to be determined on a lake-by-lake basis determined by a number of factors related to reproduction potential, productivity and angling effort. Figure 5 in Reference 1 shows that knowledge gained by WDFW through surveying has decreased the average stocking cycle frequency from every year or two before the 1940s to every 3 to 6 years since the 1960s.</i> |
| <i>Reproductive status</i> | <i>Reproductive status and potential for different fish species should be determined on a lake by lake basis through survey observations and by comparison with the same species in similar lakes."</i> |

Organization - Trail Blazers, Inc. NOCA-027 AD

"Trail Blazers agree with and support the development of a NOCA Complex Mountain Lakes Management Plan on a lake by lake basis using all pertinent available data. Trail Blazers participated in the development of a state wide management plan for mountain lakes by WDFW (Reference 1) and believe that the 70 years of experience and information gained and developed by WDFW and its predecessor agencies and volunteer organizations constitutes probably the largest body of knowledge in the United States, if not the world, regarding managing mountain lake fisheries. This knowledge is used to manage 1793 fish-bearing high lakes (Reference 1 page 5-9) out of a total of 4718 high lakes and ponds (Reference 1 page 1-4). The WDFW defines a high lake as a lake or pond at an elevation of 2500 feet or above west of the Cascades or over 3500 feet east of the Cascades (Reference 1 page 1-2). Therefore Trail Blazers recommend that NOCA Complex managers carefully study the data developed by WDFW for managing mountain lakes in the state." **Organization - Trail Blazers, Inc. NOCA-027 E**

"Since the impact of non-reproducing trout on zooplankton is not measurably significant (Liss and Larson, III), the proposed fishery would have no measurable impact on the distribution of zooplankton. Analysis at the cluster and landscape level, then, seems more appropriate with regards to amphibians, especially salamanders. The HI-

Lakers support further research and suggest that historically fishless lakes that also have no salamanders be studied to determine whether abiotic factors make them unsuitable habitat for salamanders, and whether any of the 103 lakes with a history of fish share those same factors. We would also recommend further study of the relationship between larval abundance and TKN and the TKN benchmark at which trout affect larval abundance. Tyler (1998) puts that benchmark at 0.095 mg/L, whereas Liss et al (Phase III 2002) put that benchmark at 0.055 mg/L. The sample sizes were relatively small, 7 and 4 Lakes, respectively, and further research might clarify the relationship between larval abundance, TKN, and non-reproducing trout. That information might then help biologists determine which of the 103 lakes with a history of fish to include in the proposed fishery."

Organization - Washington State Hi-Lakers NOCA-026 H

| <i>"Protecting Native Biota</i> | <i>Trail Blazers Comments</i> |
|---------------------------------|--|
| <i>Biodiversity/biological</i> | <i>Biological surveys should continue to be made of all the lakes that have integrity fish management potential. These surveys should include nearby ponds, streams and wetlands to determine their biological interaction with the lakes.</i> |
| <i>Sensitive species</i> | <i>Information on sensitive species in the lakes and downstream reaches should continue to be monitored. Outlet barriers to fish passage should be identified to determine if downstream fish passage is possible (see Outlets)."</i> |

Organization - Trail Blazers, Inc. NOCA-027 AF

"In general, the Hi-Lakers are concerned that using an arbitrary TKN level to include or exclude lakes from the proposed fishery would over-simplify 12 years of research." **Organization - Washington State Hi-Lakers NOCA-026 I**

| <i>"Fishing Opportunity</i> | <i>Trail Blazers Comments</i> |
|----------------------------------|---|
| <i>Access to lakes with fish</i> | <i>Maintain existing trails to popular lakes. Reroute or deactivate existing informal trails that impact sensitive areas. Do not make new trails to lakes. Monitor use at least on the lake basin level.</i> |
| <i>Aesthetics</i> | <i>Lakes could be classified by various aesthetic criteria. However, Trail Blazers believe that this type of information should be limited to non-sensitive areas because it can focus too much attention on sensitive areas.</i> |
| <i>Stock species</i> | <i>Species that have been found to do well in the lakes of a certain type based on catch records should be used. Research should be supported on how various species perform in the NCNP environments.</i> |
| <i>Catch rate</i> | <i>Various catch rates should be available for a variety of experiences. Stocked lakes can be managed for "quality" meaning fewer and larger fish, while lakes with low or moderate reproduction can be managed for higher catch rates. Individual smaller lakes should not be singled out in rule making to prevent drawing attention. Catch limits should not be varied by lake because that focuses attention on certain lakes</i> |
| <i>Riparian vegetation</i> | <i>Repair unneeded social trails. Close lake basins to camping or horses if needed. Educational materials should be provided to back country users discussing how to minimize trampling of vegetation by using rockslides or areas away from the shore for traveling. The use of lightweight fishing rafts also minimizes trampling.</i> |
| <i>Camps</i> | <i>Provide No Trace camping and hiking information to backcountry users. Trail Blazers worked with the Forest Service to develop a wilderness trailhead pamphlet called "The Off-Trail Challenge." This pamphlet discusses "No Trace" techniques such as: not marking route, travel on rock and snow instead of heather and boggy areas, and using a stove."</i> |

Organization - Trail Blazers, Inc. NOCA-027 AC

"Decide lakes to be stocked based on science rather than history-look at adaptive management of all lakes"
Individual NOCA-030 M

Topic: Lake Dynamics and Composition

Cumulative impacts

"Stocking fish in naturally fishless lakes is clearly a case of endangering or even sacrificing native lake ecosystems to cater to a small, special interest groups (high lakes fishing groups). Species introductions are bad for native ecosystems." **Individual NOCA-010 D**

"Fish in proper numbers do not measurably change the lakes dynamics and biological composition." **Individual NOCA-001 D**

Effects of altered aquatic species abundance

"Trail Blazers agree that high-density fish populations can impact the abundance and diversity of aquatic organisms they prey on. That is why Trail Blazers together with the WDFW have monitored and recorded the results of mountain lake fish stocking and introductions since the beginning of recorded fish introduction history. These records, summarized in the table below, are extensive and allow WDFW biologists to better manage the numbers, cycle and species of fish introduced. This management method has greatly reduced impacts of fish on native organisms and provided a higher quality trout fishery. High lake fish stocking densities prior to 1933 (the year the Washington State Game Dept. and Trail Blazers were established) often exceeded 1000 fish/acre. High lake fish stocking densities managed by the WDFW and predecessor agencies have trended down over the decades and ranged from about 70 to 110 fish/acre during the 1990s (Reference 1 Figure 4). (Note: this extensive database can also be used to help identify and prioritize lakes for restoration.)"

| Area | TB Stocking Records | TB Survey Records | Comment |
|-------------|---------------------|-------------------|---|
| NOCA non RA | 217 | 570 | NOCA Complex lakes outside Recreation areas |
| NOCA RA | 119 | 340 | NOCA Complex lakes inside Recreation areas |
| High Lakes | 12,390 | 11,709 | All high lakes in Washington |

(Nutrient cycling. Introduction of fish can cause changes in nutrient availability and cycling. Any introduction of fish will have an impact on the natural trajectory of lakes including nutrient changes.)" **Organization - Trail Blazers, Inc. NOCA-027 N**

"We are concerned that introducing fish into an environmental in which they do not exist naturally threatens localized extirpations of amphibian species and their offspring which become food source for the fish." **Organization - Kettle Range Conservation Group NOCA-003 A**

"Enough research exists to indicate that trout can affect the behavior of salamanders in certain lakes. If further research indicates that the change in behavior is sufficient to threaten biological integrity, then the Hi-Lakes would support restoring those NOCA lakes in which salamanders are affected to a fishless condition. Research also seems to indicate that reproducing populations of trout can significantly reduce and may even eliminate some aquatic organisms in certain lakes. However, the same research also indicates that there is no significant difference in the abundance and species composition, except salamanders, between lakes with non reproducing trout and the abundance and species composition in fishless lakes; further, the abundance of salamanders is affected by non-reproducing trout only under certain conditions (Liss and Larson, Phase III, p. 131). The Hi-Lakes are concerned that the EIS might be misinterpreted to mean that the deleterious effects observed in some lakes would persist under the new plan, whereas the new plan could actually mitigate those effects by using non-reproducing trout." **Organization - Washington State Hi-Lakers NOCA-026 B**

"Clarify the impacts to amphibians, and the collective benthic communities, in both deep and shallow lakes that have reproducing populations of trout. Clarify the impacts to amphibians, and the collective benthic communities, in both deep and shallow lakes that have been stocked with trout but where they do not reproduce."

Organization - King County Outdoor Sports Council NOCA-016 B

"He said "One of the reasons this was my favorite lake is because there was always a chorus of frogs. They used to sing me to sleep. We've been here three days and I haven't heard a frog." I asked him if he had any idea why. He said "Yeah - those darn fish ate the tadpoles as well as fish larvae!" Of course, they also feasted on a lot more aquatic life." Individual NOCA-007 A

Effects of altered aquatic species behavior

"Enough research exists to indicate that trout can affect the behavior of salamanders in certain lakes. If further research indicates that the change in behavior is sufficient to threaten biological integrity, then the Hi-Lakes would support restoring those NOCA lakes in which salamanders are affected to a fishless condition. Research also seems to indicate that reproducing populations of trout can significantly reduce and may even eliminate some aquatic organisms in certain lakes. However, the same research also indicates that there is no significant difference in the abundance and species composition, except salamanders, between lakes with non reproducing trout and the abundance and species composition in fishless lakes; further, the abundance of salamanders is affected by non-reproducing trout only under certain conditions (Liss and Larson, Phase III, p. 131). The Hi-Lakes are concerned that the EIS might be misinterpreted to mean that the deleterious effects observed in some lakes would persist under the new plan, whereas the new plan could actually mitigate those effects by using non-reproducing trout." Organization - Washington State Hi-Lakers NOCA-026 B

"Non-native fish have measurably changed lake dynamics and biological composition, including: (Behavior. Introduced fish are associated with changes in amphibian behavior. Lakes with introduced fish are observed to have fewer amphibians present during the daytime, presumably due to the threat of predation.). Trail Blazers agree that introduced fish can change the behavior of amphibians. However, the extent of this behavior change is a function of the physical characteristics of the lake, lake productivity, fish stocking cycle and density, fish reproduction potential, etc. Trail Blazers support a lake by lake analysis to determine whether a sensitive amphibian population exists, or is at such a low level that its viability is threatened by the presence of fish." Organization - Trail Blazers, Inc. NOCA-027 M

"Clarify the impacts to amphibians, and the collective benthic communities, in both deep and shallow lakes that have reproducing populations of trout. Clarify the impacts to amphibians, and the collective benthic communities, in both deep and shallow lakes that have been stocked with trout but where they do not reproduce." Organization - King County Outdoor Sports Council NOCA-016 B

Effects of altered nutrient cycling

"Trail Blazers support the concept of not stocking fish in waters that have never been stocked to maintain some waters in their essentially natural state for this and future generations for philosophical, aesthetic and research purposes. However, Trail Blazers believe that the natural chemical state of many lakes has already been changed by historic activity and that attempts to restore the natural chemical condition of lakes by removing fish will be marginal at best, at least for the foreseeable future. Trail Blazers support research on those lakes that once had fish but were allowed to go fishless to better understand how the chemical condition of these lakes respond, before attempting to remove fish on the assumption that the "natural condition", whatever that was, will be restored. Trail Blazers also support political and administrative efforts to control chemical impacts including: air pollution sources and water pollution from abandoned mine lands." Organization - Trail Blazers, Inc. NOCA-027 O

Regulations, methodologies and assumptions

"Determine appropriate levels, if any, of continued fishing for naturally reproducing populations of fish. This would include special gear, seasonal, take limits, permits, reporting requirements, etc. that would mitigate effects

of fishing and allow the NPS better information with which to monitor fishing activity if continued. As brought up in Public meetings, the use of lead shot sinkers, live bait, and fluorocarbon lines [that do not biodegrade] are some of the issues to be addressed." **Organization - North Cascades Conservation Council (NCCC) NOCA-028 D**

"It was evident from the presentations at the scoping meeting about the number of lakes and ponds that there is not a common definition for a mountain lake versus a pond and this only adds confusion to an already complex issue. Ponds are certainly ecologically important; particularly those adjacent to mountain lakes with fish because of the refuge they offer to potential fish prey. While this point should be developed in the EIS, the management actions will be directed at lakes that can or currently support fish populations." **Individual NOCA-025 M**

"Add issue: Need to consider recovery time for specific lakes and not make the assumption that lakes will take forever to recover (i.e., do not make assumptions based on time). Lakes that have not been recently stocked will probably be closer to the way they were before stocking than lakes that have been recently stocked." **Individual NOCA-030 AH**

"Consider use issues in all alternatives." **Individual NOCA-030 O**

"Recognize value of other resources/fauna in lakes" **Individual NOCA-030 H**

"Add information on cold/deep vs. warm/shallow (significant vs. insignificant)" **Individual NOCA-030 P**

"What about other lakes: include all dimensions (reproducing/non-reproducing, deep/shallow, warm/cold)" **Individual NOCA-030 F**

Topic: Miscellaneous Topics

General Comments

"Considering existing resources and organizational structures, Trail Blazers understand that it is not possible for any one organization or program to address the entire NOCA Complex mountain lake ecosystem. However, we believe that the data collected by each organization for each program has value outside of that program and should be organized and managed so it can be accumulated and merged and accessed by all organizational entities and programs with a need to understand and manage some portion of that ecosystem. Therefore, Trail Blazers support the establishment and continued maintenance of a NOCA Complex Data Management System that captures, organizes, stores, and makes accessible all data relevant to managing the NOCA Complex mountain lakes ecosystem. Furthermore, Trail Blazers recommend inclusion in the NOCA Complex Mountain Lakes Management Plan a data management section that specifies protocols for how data collected under the plan are to be formatted and delivered for importing into the NOCA Complex Data Management System. These data would include field observations and laboratory sample results in addition to summary data." **Organization - Trail Blazers, Inc. NOCA-027 D**

"The Hi-Lakers believe that further research would increase our understanding of the complex mountain lake ecosystem. It is our hope that the Park will continue to work cooperatively with the Washington Department of Fish and Wildlife (WDFW), other agencies, and organizations such as ours in the collection and analysis of data and in the application of science and research to management of NOCA mountain lakes, the Hi-Lakers conduct lake surveys (form attached) that help biologists assess the age, size, health, and reproductive status of fish populations, as well as gauge the level of use, number of camp sites; fire rings, and social trails. Such a survey would be of use to the Park in assessing the level of backcountry use, damage to riparian zones, or the presence or absence of amphibians. We have made some effort to educate ourselves to the worldwide decline of amphibians, especially in relation to fish introductions. Dr. Klaus Richter, King County herpetologist, has given two presentations to the Hi-Lakes on the life cycles and habitats of amphibians and on the identification of egg masses and juveniles. We will begin carrying a version of his survey form (attached) into the high lakes this

summer. Granted, we're a volunteer organization without the funds and equipment used in the Park's 12-year study, but state-wide we turn in approximately 400 lake surveys a year, which represents a significant body of information from a consistently reliable source." **Organization - Washington State Hi-Lakers NOCA-026 A**

"There is an important ecological point here as well. Ninety percent of the mountain lakes in the western United States were naturally fishless; but today, ninety percent have stocked or reproducing fish populations. The NPS managed land, air, and waters offer the last vestige of "unimpaired" natural resources in our country."

Individual NOCA-025 P

"Determine a plan to identify and monitor recovery of high mountain aquatic ecosystems from effects of fish stocking and past fish management processes." **Organization - North Cascades Conservation Council (NCCC) NOCA-028 E**

"Part of the solution is education. Here is where the additional resources of WDFW, the media, and citizen recreational fishing groups are vital. If people know that NOCA and WDFW are working cooperatively to maintain an excellent recreational fishing program in the complex, they will be less tempted to take matters into their own hands." **Individual NOCA-012 L**

"The Hi-Lakers recognize that adaptive management means that criteria for evaluating success may themselves change, and commentary on each on therefore seems premature. We do have two suggestions, however. Under "Fishing Opportunity," we suggest that the Park include an education program to inform the public of available opportunities for recreational fishing in the Park, and under "Protecting Native Biota" we suggest the Park monitor escapement where bull trout exist downstream." **Organization - Washington State Hi-Lakers NOCA-026 O**

"Management of the NCNP Complex requires protection of the resources, AND availability of recreational opportunities." **Individual NOCA-017 A**

"Insert NOCA Complex before mountain lakes in purpose." **Individual NOCA-030 AQ**

"Be clear on research and its application for "reintroductions"." **Individual NOCA-030 AY**

"Consider not referring to the MOU in Alternative C." **Individual NOCA-030 AN**

"Add species composition to the list of "alteration of lake ecosystem dynamics"." **Individual NOCA-030 AU**

"Value of NPS area/lakes as benchmark area of naturally-functioning ecosystem." **Individual NOCA-030 K**

"#1: Concern about terminology: "non-native" vs. no fish/fishless. Avoid use of terms "non-native," "native"-all fish in high lakes were not native to those lakes. Keep options open for species used in management options."

Individual NOCA-030 X

"Trade use of "native" for "indigenous"-use clear definition of term." **Individual NOCA-030 AV**

"Make sure we have a clear definition and use of the term "restoration"." **Individual NOCA-030 AW**

"Have severe and well-publicized consequences for violation of adopted management." **Individual NOCA-030 AX**

"Partner with academic institution-new research opportunities to inform adaptive management." **Individual NOCA-030 BH**

"Discontinue stocking in wilderness." **Individual NOCA-030 N**

"Alternative B: All lakes should be managed with best science (not just a subset)." Individual NOCA-030 BG

"Where unsanctioned stocking is referred to, it should also include "introduction". Individual NOCA-030 BA

"#3-change trampling to impacts." Individual NOCA-030 BB

"Don't forget the basis for National Parks-let lakes evolve naturally." Individual NOCA-030 BF

Topic: Native and Introduced Species Overlap

Cumulative impacts

"In retrospect, we can say that brook trout should never have been introduced to the Western US, salmon habitat should have been left in better condition, the Nile perch should not have been introduced in Lake Victoria, exotic centrarchids should not have been stocked in lakes throughout the US, etc. . . . We have paid a huge price for these poorly conceived management practices in the form of degraded ecosystems, expensive restoration projects, and species extinctions." Individual NOCA-010 B

"Assess the full impacts of fish stocking on high mountain aquatic ecosystems -- not just Mountain Lakes. Watercourses leading into and out of mountain lakes are very susceptible to "leakage" of introduced fish and their documented impacts. Further, it is important that the analysis examine this issue from a landscape scale down to a single lake scale. The broader ecosystem look is because of a desire to see if there is adequate aquatic habitat existing to support all the species in the Park if the NPS chooses not to stop stocking." Organization - North Cascades Conservation Council (NCCC) NOCA-028 A

Interaction with other fish species (competition, predation. (non-T&E)

"I believe that evidence for disruptions to the food chain and damage to other species is slim at best. If the amphibian population is declining because of fish, why are they also declining in lakes and drainages that lack fish?" Individual NOCA-023 B

"native cutthroat trout, rainbow trout, and bull trout populations have suffered tremendously from brook trout introduction in the Western US." Individual NOCA-010 A

Regulations, methodologies and assumptions

"Only 16 lakes and ponds with fish are under 2 ha in size and less than 15 m deep. Also they are in remote areas that would require repeated visits by helicopter to carry the required nets for the 3-4 years of netting required." Organization - Trail Blazers, Inc. NOCA-027 W

"Downstream dispersal of reproducing trout could adversely affect native fish. However, the Hi-Lakers believe that low-density stocking of non-reproducing fish will preclude potential problems associated with escapement, including the possibility of interbreeding. The EIS implies that the possible introduction of disease is an issue. It is an issue with unsanctioned stocking but not with a well-managed fishery. The WDFW raises fry in carefully controlled conditions and evaluates their health and condition before stocking. We do not recall Liss and Larson noting any instance during their 12-year study of fish-borne disease among fish or among amphibians coexisting with fish. There remains a possibility that escapement might lead to competition with native species for available food, but low-density stocking of non-reproducing fish will effectively limit the number of fish that might escape. Nonetheless, some means of monitoring possible escapement seems advisable, especially in waters where bull trout are known to exist downstream." Organization - Washington State Hi-Lakers NOCA-026 J

"Trail Blazers support stocking functionally sterile fish and not stocking fish that could interbreed or compete with federally threatened or native trout. The Trail Blazers database contains downstream links for each Reach.

This enables analysts to readily understand downstream reaches that may be affected. Trail Blazers support research that shows which stream reaches contain federally threatened or native trout. Trail Blazers support research that identifies lakes that have downstream barriers that would effectively prevent outlet migration."
Organization - Trail Blazers, Inc. NOCA-027 V

"Assess the full impacts of fish stocking on high mountain aquatic ecosystems -- not just Mountain Lakes. Water courses leading into and out of mountain lakes are very susceptible to "leakage" of introduced fish and their documented impacts. Further, it is important that the analysis examine this issue from a landscape scale down to a single lake scale. The broader ecosystem look is because of a desire to see if there is adequate aquatic habitat existing to support all the species in the Park if the NPS chooses not to stop stocking." **Organization - North Cascades Conservation Council (NCCC) NOCA-028 A**

Topic: Other NEPA Issues

General Comments

"Under the NPS mandate from the Redwood Act, the EIS alternatives for managing mountain lakes should not be based upon whether or not they reside in the National Park or the National Recreation Areas. Other considerations should include NPS impairment standards and guidelines, Resource Natural Areas designations, the Wilderness Act, and the Wild and Scenic River Act (particularly where fish have escaped lakes into streams and rivers to compromise the genetics of native fish)." Individual NOCA-025 L

"Point 2 - Increasing perceived public value of the park through recreational use. Ira Spring, co-author of the many "100 Hikes" series of hiking guidebooks calls it "Green Bonding." This is simply the nurturing of public support through their active participation in enjoyment of the park's resources and amenities. For over a dozen years, I served on the backcountry issues advisory committee for Washington Trails Association with Ira and numerous officers and directors of WTA. I have had Ira's Green Bonding theme pounded into me over and over and over. And I believe it as strongly as Ira." Individual NOCA-012 H

"Missing Issue: One missing issue, if one assumes that fish stocking will continue, is what sort of management arrangements would be permitted [e.g., catch and release, fly fishing only, catch permitted, seasons, use of live bait]. Each of these could be important ecologically and socially and should be directly assessed and addressed."
Organization - North Cascades Conservation Council (NCCC) NOCA-028 S

"Trail Blazers support a management plan that provides full and open access to available non-sensitive information. It is our experience that information that directs too many people to sensitive areas can have a very deleterious effect on fish, vegetation, and other sensitive species. The worst offenders in this regard have been hiking, fishing and climbing guide books with nice pictures and enthusiastic descriptions that focus people's attention on a relatively few areas. Another potential problem would be the widespread dissemination of fish stocking and survey data that focuses people's attention on specific quality fisheries. It is Trail Blazers opinion that members of the public who are interested in quality fishing and hiking or climbing experiences either join one of the organizations in the area that have qualified programs to stock and survey lakes, maintain trails and clean up garbage, and provide education on safety and minimizing impacts on the environment, or explore and find areas on their own." Organization - Trail Blazers, Inc. NOCA-027 K

"In parallel, stocking fish to maintain a recreational fishery adds perceived value. The degree of stocking should be to provide the greatest opportunity while minimizing impact to native biota, not just minimizing impact alone. The problem is that perceived value and impacts on native biota are nearly impossible to quantify in dollars in order to calculate the best trade-off. But qualitatively, it strikes me as common sense that maintaining or enhancing the recreational fishery in the North Cascades complex will increase the political willingness of our citizens and elected officials to retain the park as a public asset." Individual NOCA-012 J

Topic: Potential of Illegal Stocking

Enforcement

"For two years, 1994-96, I was the co-director of the Nordic Ski Patrol at Mount Rainier (MORA), a cooperative program between the Washington Ski Touring Club and the Park. Through this, I got to know John Wilcox, senior Muir District Ranger for MORA well enough that he invited me to hike with him to the Lake James patrol cabin over the September 9-10th weekend in 1995. This was not only to enjoy a weekend hike together, but to give me the opportunity to survey the fish populations in Oliver, Adelaide and Maijorie Lakes nearby and report my findings to the Park's natural resource managers, Barbara Samora and Dr. Gary Ahlstrand. During the trip, I had a chance to talk at length with John about fish populations in MORA and the problem they have had with illegal stocking in some of the more easily accessible lakes. It is not an insignificant problem." Individual NOCA-012 N

"My concern is that if fish stocking is limited or eliminated, rouge fish planters will spread who knows what species of fish into NCNP lakes without professional management by the WDF&W." Individual NOCA-004 C

"The Hi-Lakers strongly oppose unsanctioned stocking, which can introduce undesirable species and disease as well as ruin the mutual trust required to make the proposed plan work. While periodic stocking of remote lakes requires skill and advance planning, it is relatively easy for individuals, acting on the spur of the moment to transport fish over short distances, removing them from a lake or river and dropping them in a nearby lake or stream. The Hi-Lakers would support imposing penalties on unsanctioned stocking and suggest those penalties be well advertised. In general; however, we think the time and money spent on enforcement and prosecution would be better spent on prevention. Education and a well-managed fishery are the best means of prevention."

Organization - Washington State Hi-Lakers NOCA-026 L

"The flip side presents the danger in adopting Alternative D- No Stocking. There is a small percentage of citizenry who disdain authority and will defy regulations. There is a significant probability that a no-stocking policy will result in increased illegal fish stocking. The worst case is where improper fish species are then introduced to lakes where they can reproduce and create even greater biological impacts than maintenance of a low-density recreational stocking program would ever have." Individual NOCA-012 M

"Part of the solution is education. Here is where the additional resources of WDFW, the media, and citizen recreational fishing groups are vital. If people know that NOCA and WDFW are working cooperatively to maintain an excellent recreational fishing program in the complex, they will be less tempted to take matters into their own hands." Individual NOCA-012 L

"Distance to lakes is an important issue. Keep stocking lakes that have easy access and that would be difficult to keep from unsanctioned stocking and discontinue stocking lakes that are difficult to access since they probably won't suffer from unsanctioned stocking." Individual NOCA-030 AJ

"Unsanctioned stocking"-focus on public education to discourage it: provide opportunity for fishing, focus on rehab of lakes with public and why." Individual NOCA-030 AL

Topic: Purpose and Need

Current Regulatory Framework

"One objective is the "provision of a spectrum of recreation opportunities, including sport fishing, while

minimizing impacts." This is not exactly the policy of the National Park Service. NPS policy is to get rid of invasive and non-indigenous species and to maintain or restore natural processes. The NPS own policies require this. So does the Clean Water Act with its emphasis on "biological integrity" as a management goal and the NPS is required to implement that law. Continuing to put non-indigenous trout into Park Lakes seems at odds with this policy unless provision of sport fishing recreation is a higher goal." **Organization - North Cascades Conservation Council (NCCC) NOCA-028 O**

"Expand on the legal and management analysis of NPS authorities and policies relative to high lake fish management as applied to NCNPC. The current "White Paper" document is a good start for this but it is too general and does not address specific issues that have consistently been raised over the years relative to NCNPSC, e.g., legislative intent vs. wording of statute; change in law and policies over time; primacy of NPS management authority vs. that of the state, etc. New issues associated with how to define 'impairment' also arise and more guidance would be useful to understanding management alternatives and choices. A very important question is the legality of continued introduction of non-native species in a National Park." **Organization - North Cascades Conservation Council (NCCC) NOCA-028 H**

"Use regulations as a management tool." **Individual NOCA-030 AA**

Impairment Policies and Mandates

"Expand on the legal and management analysis of NPS authorities and policies relative to high lake fish management as applied to NCNPC. The current "White Paper" document is a good start for this but it is too general and does not address specific issues that have consistently been raised over the years relative to NCNPSC, e.g., legislative intent vs. wording of statute; change in law and policies over time; primacy of NPS management authority vs. that of the state, etc. New issues associated with how to define 'impairment' also arise and more guidance would be useful to understanding management alternatives and choices. A very important question is the legality of continued introduction of non-native species in a National Park." **Organization - North Cascades Conservation Council (NCCC) NOCA-028 H**

Objectives in Taking Action

"This may be getting pretty picky but possibly important. One objective is stated as, "to advance the protection and rehabilitation of native biological integrity by maintaining native species abundance, viability and sustainability." Here the standard to achieve is to "maintain" not to "restore." Under any of the Alternatives proposed below there are opportunities to restore damaged lake ecosystems and that should be a clearly stated objective." **Organization - North Cascades Conservation Council (NCCC) NOCA-028 P**

"New Objective. There is no stated objective to establish Park aquatic ecosystems as scientific reference areas and to use them in comparison of other non-park Wilderness area fishery management or other management in aquatic ecosystems of the Cascades. The mere fact that there are literally thousands of Cascade lakes outside of the NPS areas should be recognized as part of the analysis. The NPS is not constrained to provide fishing opportunities that exist elsewhere." **Organization - North Cascades Conservation Council (NCCC) NOCA-028 Q**

"Control spread of invasive species." **Individual NOCA-030 AR**

"Add: to coordinate and cooperate with relevant agencies and public interest groups." **Individual NOCA-030 AS**

"Objectives should be put in measurable terms-quantifiable-so you can measure success over time." **Individual NOCA-030 U**

Park Legislation/Authority

"Securing a policy waiver should not be an impediment to ensuring a plan is adopted that includes fish stocking. A policy waiver will represent to the citizens of Washington state the resolve and commitment of the agency to providing a full spectrum of recreational opportunities and visitor experiences, including sport fishing in mountain lakes." Individual NOCA-019 D

"Expand on the legal and management analysis of NPS authorities and policies relative to high lake fish management as applied to NCNPC. The current "White Paper" document is a good start for this but it is too general and does not address specific issues that have consistently been raised over the years relative to NCNPSC, e.g., legislative intent vs. wording of statute; change in law and policies over time; primacy of NPS management authority vs. that of the state, etc. New issues associated with how to define 'impairment' also arise and more guidance would be useful to understanding management alternatives and choices. A very important question is the legality of continued introduction of non-native species in a National Park." Organization – North Cascades Conservation Council (NCCC) NOCA-028 H

"Sportsmen including fisherman were instrumental in getting the NCNP legislation passed by the US Congress in the 1960's. While the documentation is not entirely clear, it was the intent of the legislators involved to continue fish stocking in the high lakes of the NCNP." Individual NOCA-004 B

"The National Parks exist to preserve examples of the Nation's most valuable and unique natural resources. Preservation is for the benefit of the public, future generations and, in my opinion, also because the Parks and their native plants and their have intrinsic value and a "right" to persist." Individual NOCA-010 C

"The high duality alpine lake recreational fishery of the North Cascades was one of the aspects of importance to be protected by creation of the national park and recreation areas of the complex. The high lakes fishery is important and the North Cascades complex is a significant fraction of that opportunity." Individual NOCA-012 B

"Clarify the 1989 Consent Decree as to what the NCNP is obligated to do in regards to the fish stocking issue from the scientific conclusions made in the Liss & Larson report." Organization - King County Outdoor Sports Council NOCA-016 C

"[Stocking is] not NPS policy." Individual NOCA-030 A

Scope of the Analysis

"Perhaps seen from a bureaucratic perspective the need is to respond to the issues raised in the Consent Decree and other responsibilities, the real need is to address the degradation occurring in mountain aquatic ecosystems in NPS jurisdiction due to introduction of fish." Organization - North Cascades Conservation Council (NCCC) NOCA-028 N

"Trail Blazers have concerns that since the missions of NOCA and the adjacent Forest Service land managers are different, a NOCA Complex mountain lake plan is not necessarily appropriate for managing mountain lakes outside the NOCA boundary. Therefore Trail Blazers recommend that the phrase "mountain lakes" be replaced with "NOCA Complex mountain lakes." Organization - Trail Blazers, Inc. NOCA-027 A

"While it may be appropriate to consider the continuation of sport fishing in Park and NRA lakes it is not an obligation -- particularly if it impairs park resources. NPS should specify what it means by "spectrum of visitor experiences." Conflicts among these experiences and continued fish stocking should be addressed." Organization - North Cascades Conservation Council (NCCC) NOCA-028 M

"Title of Management Plan should be "Mountain Aquatic Ecosystem Management Plan" not "Mountain Lakes

Fishery Management Plan." The NPS is properly assessing how mountain lakes [streams, swamps and other aquatic systems and their flora/fauna are managed] based on discussions with staff at public Meetings. Thus, the title should reflect that broader interpretation." **Organization - North Cascades Conservation Council (NCCC) NOCA-028 L**

"While I am not aware of the motivation in discontinuing the stocking program I think all avenues should be explored in keeping the program running. Catch and release, fly fishing only, selective fishing, regs, switching to a heartier species, say grayling, all avenues should be examined to keep what is an outstanding recreational sport going." **Individual NOCA-008 A**

"The stated objectives suffer from the same biases as the purpose and need statements. The goal should be to satisfy as many of the interests of the concerned parties as possible while protecting and rehabilitating the ecological integrity of mountain lakes. The first and foremost NPS interest should be the protection and rehabilitation of native ecological integrity of mountain lakes." **Individual NOCA-025 F**

"The need statement can be strengthened to reflect the fact that the NPS and USGS with Oregon State University have completed 12 years of research on the effects of fish on naturally fishless mountain lakes in accordance with the NPS/WDFW Memorandum of Understanding, that this research and management plan were to be completed by 2000 but have required two extensions of the MOU, and finally to comply with the Consent Decree with an environmental assessment." **Individual NOCA-025 E**

"While it may be the preferred alternative of the Washington Department of Fish and Wildlife (WDFW) and some interest groups to retain sport fishing in these lakes under Washington's spectrum of recreational opportunities, it is inappropriate in the NPS purpose statement. The primary NPS mandate is to preserve natural and cultural resources unimpaired for the enjoyment of future generations. By crafting the current purpose statement to include sport fishing, the potential EIS alternative of eliminating all non-native fish in naturally fishless mountain lakes is not an option, and does not appear in your list of potential EIS alternative. Returning these mountain lakes to their natural fishless condition should be a management action considered in complete EIS detail." **Individual NOCA-025 B**

"Trail Blazers agree with the concept of all data pertinent to the NOCA Complex mountain lakes being used to develop and implement a fishery management plan, as opposed to a political solution based on balancing competing interests or that is based on some overarching philosophy. These pertinent data should include not only the specific research studies commissioned to try to answer specific fishery questions but also data from all sources including: National Park, state and federal Fish and Wildlife, Forest Service, USGS, EPA, Universities and volunteer organizations. Therefore Trail Blazers support the continued collection and management of physical/chemical/biological and human use data to better understand and manage the NOCA Complex mountain lakes ecosystem." **Organization - Trail Blazers, Inc. NOCA-027 B**

"The National Park Service (NPS) purpose should be to develop a management plan for the mountain lakes to conserve their native ecological integrity within North Cascades NPS Complex." **Individual NOCA-025 A**

"Providing a spectrum of recreational opportunities, including sport fishing, should be a secondary purpose. This view is consistent with the purpose that Congress created the National Park Service, "which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." 16 USC 1. This view is also consistent with NOCA's Mission Statement, which states that "[a]s a unit of the National Park Service, the North Cascades National Park Service Complex is dedicated to conserving, unimpaired, the natural and cultural resources and values of North Cascades National Park, Ross Lake National Recreation Area and Lake Chelan National Recreation Area for the enjoyment, education, and inspiration of this and future generations." This view also is consistent with the administration of the recreation areas that "will best provide for (1) public outdoor recreation benefits and (2) conservation of scenic, scientific, historic, and other values contributing to public enjoyment." 16 USC 90c-1." **Individual NOCA-024 B**

"I my view the primary purpose of the Mountain Lakes Fishery Management Plan should be to conserve native biological integrity." Individual NOCA-024 A

"Plan should use 'best available science'" Individual NOCA-030 S

"#1-clarify which lakes (deep, cold/warm, shallow)." Individual NOCA-030 E

"Purpose statement should specify this plan will apply only to NOCA mountain lakes." Individual NOCA-030 AE

Wilderness Policies and Mandates

"Assess the NCNPC lakes as scientific reference areas for other management agencies in other parts of the Cascades. Discuss role of NPS policies in light of the broader Cascades ecosystem. As directed by Congress the Park is to be kept in Wilderness and pristine condition and the surrounding National Forests are managed for multiple uses." Organization - North Cascades Conservation Council (NCCC) NOCA-028 G

Topic: References

General Comments

"I would also like to mention that the 2 year study and final Liss and Larson scientific report was favorable towards Trout impact on the rest of the biota in 60 or so NCNP Lakes." Individual UNOCA-015 B

"1. The park commissioned study done by Liss and Larson has shown that low level fish planting in lakes with non-reproducing populations does not have any significant effect on other native aquatic life." Individual NOCA-009 A

"The 8 years of Liss/Larson research is a good database start, but it should not be the end." Individual NOCA-017 B

"Because of the studies done by Liss and Larson which cost 1.6 million dollars. It seems that fish in the proper numbers do not upset the ecology of the lakes. The lakes that have spawning fish do upset the lakes ecology and must be put under control." Individual NOCA-001 A

"It seems to me that the Liss and Larson studies show that under certain conditions stocking can be conducted in many Park lakes with little effect on the wider ecosystem. I would urge that lake stocking in non-reproducing conditions be allowed to continue." Individual NOCA-013 A

"Also, the Skagit Watershed Council is currently developing some guidelines that may be applicable to or modified for the management of mountain lakes." Individual NOCA-025 I

"In view of the Liss-Larson study, which shows fish and the native biota can co-Exist, fishing and some planting should continue." Individual NOCA-020 A

"Studies have shown that 20 years is sufficient for significant rebound in a high lake to occur for all species that is able to colonize ["Resistance and Resilience of Alpine Lake Fauna to Fish Introductions"; Ronald A. Knapp, Kathleen R. Matthews, and Orlando Sarnelle; Ecological Monographs, 71(3), 2001, pp. 401-421]." Individual NOCA-011 E

"See Kathleen Matthews study on yellow-legged frogs and lake recovery time. Also see Landis, et al. 1996." Individual NOCA-030 AI

Topic: Reproducing Fish Populations

Effects of overpopulation of fish

"The lakes that have spawning fish should be looked at as individual lakes and a assessment to be made on each lake for the removal of the spawning fish." **Individual NOCA-001 B**

"The Hi-Lakers agree that reproducing populations of trout, especially brook trout and cutthroat, can overwhelm the food supply in a lake, reducing both the abundance of aquatic life and the quality of fishing. For both reasons, we support removal of reproducing populations from NOCA lakes where removal is deemed advisable."

Organization - Washington State Hi-Lakers NOCA-026 D

Regulations, methodologies and assumptions

"Because of historical fish introductions, some lakes contain stunted reproducing fish populations that impact the biological integrity of the lake's aquatic community. Thus WDFW and Trail Blazers have long recognized the need to control over-reproducing populations. This recognition has resulted in several research efforts and field programs to determine effective methods of control while at the same time not doing any more harm. WDFW has researched chemical methods of control. Trail Blazers have participated with WDFW in biological field programs to test controlling reproducing stunted populations using aggressive functionally sterile fish to prey on the stunted populations. These lakes are being surveyed annually to determine the efficacy of these biological controls. (Reference 1 pages 5-115 to 117)." **Organization - Trail Blazers, Inc. NOCA-027 P**

"Look at getting rid of reproducing fish lake by lake" **Individual NOCA-030 Q**

"Do not include lakes for stocking that have reproduction-stock with cyclical stocking." **Individual NOCA-030 Z**

Topic: Restoration Challenges

Biological methods of fish removal

"Predator fish like the Tiger Trout and Tiger Muskies also is a wonderful method." **Individual NOCA-001 F**

"Trail Blazers support research to determine the effectiveness and harmfulness of introducing predator fish to control stunted fish populations. Trail Blazers do not believe the addition of low numbers of predators would create conditions more ecologically stressful than the existing problem fish population (Reference 1, pages 5-116 through 5-136)." **Organization-Trail Blazers, Inc. NOCA-027 X**

Chemical methods of fish removal

"I am very much against the use of chemical poisons for the removal of fish." **Individual NOCA-001 C**

"Trail Blazers support the use of Antimycin in removing or controlling stunted fish populations in mountain lakes since research has shown this pesticide to be the least harmful among any of the chemical methods, and is very limited in the range of species affected (Reference 1, Pages 5-115 and 5-116 and associated technical references). Antimycin has been used in Mount Rainier and Crater Lake National Parks to remove non-native fish from high

lakes, and to assist in a bull trout recovery program, respectively." **Organization - Trail Blazers, Inc. NOCA-027 Y**

"I do not recommend the use of chemicals poisons because they are not safe in the wilderness. They will be hard to carry them in to the area. Most of the lakes have outlet steams and the chemical poisons may be extremely harmful in the outlet streams." **Individual NOCA-001 G**

Physical methods of fish removal

"The Hi-Lakers support mechanical and, in certain cases, chemical removal of reproducing populations and would be willing to assist the Park and the WDFW in that endeavor. While some of our members feel that the use of biological agents (e.g., tiger muskie) would make for interesting fish, others feel that such an action would be likely to create more problems than it solved. We defer to the Park and WDFW biologists on the use of predator fish. In larger lakes where chemical removal might be necessary, we would prefer that Antimycin rather than retenone be used since Antimycin is unlikely to affect species other than fish. Some of the lakes that currently support reproducing populations might be ideal candidates for inclusion in the new fishery, so that restoration will not always mean "to a fishless condition." **Organization - Washington State Hi-Lakers NOCA-026 K**

"Nets also get many of the excess down to a OK level." **Individual NOCA-001 E**

Regulations, methodologies, and assumptions

"Assess the feasibility of restoring high mountain aquatic ecosystems that have been degraded through fish stocking. Long term studies of lakes where fish stocking has ceased show relatively rapid initial response toward their original 'states' however full recovery may take many years. Methods of restoration including passive and active methods should be detailed and their relative effects and efficacy discussed." **Organization - North Cascades Conservation Council (NCCC) NOCA-028 C**

"Restoration and rehabilitation are terms used interchangeably in your document, but they have subtle scientific terminology differences, and this should be reflected in any future document. Further, while restoration and fish removal are mentioned on pages 2 and 3, none of the EIS alternatives refer to removing fish. Discontinuing fish stocking (Alternative D) is not the same as removing fish and may be insufficient because of reproducing fish populations." **Individual NOCA-025 K**

"We support lake rehabilitation to remove populations of stunted, over reproducing, trout. Please clarify the available methods in the proposed EIS." **Organization - King County Outdoor Sports Council NOCA-016 D**

"Science of lake restoration post stocking seems inadequately represented - so far. As does research on ecosystem nutrients and how they are modified by fish." **Organization - North Cascades Conservation Council (NCCC) NOCA-028 K**

Topic: Socioeconomics

Effects from stocking restrictions

"Many of us grew up in families that went to the mountains not only for recreation but to supplement their food supply by fishing and hunting and gathering and to maintain traditions of independence and resourcefulness learned from their ancestors. In fact early fish and game management in the Northwest was geared toward supplementing food sources. Improved social and economic conditions made it less necessary for mountain lakes to be looked at as a food source so activities evolved from food toward sport and to some extent ritual. Many people want to continue outdoor traditions taught them by their parents and pass these down to their children and grandchildren." **Organization - Trail Blazers, Inc. NOCA-027 H**

"A point to consider is the financial aspect of the money spent by the fishing public for not only licenses, but the many by-products purchased." Individual NOCA-006 C

Methodology and assumptions

"Consider economic resource impacts to recreational fishing interests and of invasive species (monetary and resource impact)." Individual NOCA-030 AZ

"Socio-economic analysis-extend beyond Park boundaries. Engage other federal lands around Park. Ability to adaptively replicate to other federal lands." Individual NOCA-030 L

Topic: Visitor Experience

Effects on fish-stocking as a cultural activity

"Many of us grew up in families that went to the mountains not only for recreation but to supplement their food supply by fishing and hunting and gathering and to maintain traditions of independence and resourcefulness learned from their ancestors. In fact early fish and game management in the Northwest was geared toward supplementing food sources. Improved social and economic conditions made it less necessary for mountain lakes to be looked at as a food source so activities evolved from food toward sport and to some extent ritual. Many people want to continue outdoor traditions taught them by their parents and pass these down to their children and grandchildren." Organization - Trail Blazers, Inc. NOCA-027 H

Effects on recreational opportunities

"First of all, let me say, I am a fisherman and I would like to see continued low impact fish stocking in select High Mountain Lakes within the Park. My reasons are, for diversity of environment such as this beautiful Park has to offer. To catch a native Trout in a pristine Lake, high up in the mountains with no one else around except a Friend, Son or Daughter and to share this experience with them is one of the greatest highlights of my life." Individual NOCA-015 A

"Even to those who are not fishing, the trout swimming by and feeding on the surface is greatly appreciated by lake visitors. For the fisher the trout give them a reason to buy or tie flies, hike or ride to the lake and otherwise just enjoy the outdoor in a healthful way." Individual NOCA-023 A

"I am a long time resident of the State of Washington and do enjoy fishing. The lakes in the park provide many visitors with a wonderful fishing and outdoor experience. The stocking of these lakes is necessary for citizens to have this opportunity and experience." Individual NOCA-006 A

"What are impacts to recreation users?" Organization - Kettle Range Conservation Group NOCA-003 D

"Then lets provide a place to recreate without unnatural fish stocking." Individual NOCA-018 B

"The Hi-Lakers applaud the efforts to preserve the Park in as natural a state as possible while still providing a wide range of recreational opportunity. Since 81% of NOCA lakes have never held fish and never will, those visitors desiring a fishless experience are already well provided for, while the number of lakes available to anglers has been reduced from the historic level of 103 (19% of the total 455) to the current 65 (12%). It is our express hope that the application of research will enable the fishery to approach historic levels and thereby restore a balance to the spectrum of visitor experiences." Organization - Washington State Hi-Lakers NOCA-026 M

"Moreover, ensuring that future generations of anglers will continue to enjoy fishing in the mountain lakes of the

NCNP is an important corollary to any plan that is adopted by both agencies." **Individual NOCA-019 B**

"2. Fishing activities provide a significant part of the outdoors experience to many visitors in the park." **Individual NOCA-009 B**

"The mountain lakes, in this part of the North Cascades, historically provided a unique, outdoor fishing experience, for backcountry users. When congress designated the area as a National Park that unique experience continued. Senators Jackson, Magnuson, and Representatives Meeds, and Pelly, were of one voice - this park was going to be a fisherman's paradise. As such, any recreational loss of this unique experience should be mitigated. We note the NCNP was an Intervener in the FERC relicensing process for Ross Dam and received several million mitigation dollars." **Organization - King County Outdoor Sports Council NOCA-016 A**

"Washington Outfitters and Guides Association members operate in these areas and the fisheries there are of significant importance to our clients. We do not want to see these fish planting programs curtailed or eliminated as it will adversely affect the recreational opportunity available to our clients." **Organization - Washington Outfitters and Guides Association NOCA-014 A**

"There needs to be both near and far lakes that are stocked for different recreation experiences." **Individual NOCA-030 AK**

Effects on wilderness experience

"Acknowledgement of a wilderness overlay was completely ignored in the presentation I attended. What are the effects on Wilderness of present stocking?" **Individual NOCA-022 A**

Regulations, methodologies and assumptions

"Trail Blazers agree with the objective of providing a spectrum of recreational opportunities while minimizing impacts to the biological integrity of the NOCA mountain lakes. Trail Blazers, Inc. was formed in 1933 to assist the newly created Washington Department of Game in providing "better alpine fishing." However, Trail Blazers love the mountain areas and engage in a variety of recreational activities including: fishing, hunting, hiking, climbing, skiing, photography, and wildlife viewing. Trail Blazers consider themselves very fortunate to be able to enjoy a variety of nearby public lands. However the NOCA Complex has unique characteristics of ruggedness and remoteness that appeals to many anglers as well as climbers and hikers. It is a rare opportunity for people to be able to enjoy hiking and climbing in the NOCA Complex, with some preferring to carry a fishing pack rod along and be able to cast and land a beautiful fish in clear waters reflecting rugged peaks." **Organization - Trail Blazers, Inc. NOCA-027 G**

"The number of fishing licenses sold by the State Department of Wildlife was 588,700 adult annual licenses in 1991 corresponding to about 16% of the state's adult population of 3.6 million. In addition, about 12,000 licenses were sold to non-resident visitors. Applying the REI angler participation percentages to the total number of hikers would lead to an estimate of 105,000 hiking anglers, amounting to about 18% of the licenses sold. The WDFW surveyed license holders in 1988 and found that 65.4% were primarily lowland lake anglers, 23.6% were primarily stream anglers and 11.0% were primarily high lake anglers. The 7% difference between the estimate based on REI participation level and the surveyed primary interest would correspond to the crossover interest among those who list streams or lowland lakes as primary, but who do some high lake fishing. WDFW resurveyed license holders in 1994 and again found that about 10% of fresh water license holders stated that their primary interest was the high lakes fishery." **Individual NOCA-012 E**

"Fishing in the high mountain environment is much akin to hiking and camping in those same environments. Each provides great recreational value while at the same time modifying the natural pristine state of the wilderness. Unless a case can be made for restricting any sort of recreational use of the park, one must balance the positive recreational value of fishing or hiking/camping vs. the impact such uses have. Trail Blazers judge that a

scientifically managed high lake fishery of non-reproducing trout provides an appropriate balance of benefit vs. impact. In fact, it is possible that the benefit/impact of non-reproducing fish in lakes is even better than that of hiking, climbing, and other wilderness uses. Surely most visitors would see fish jumping in a lake as less damaging than the ugly scar of a trail." **Organization - Trail Blazers, Inc. NOCA-027 AA**

"The logic of constructing trails is to place them where they will do least damage. Trails that grew out of early use often followed terrain of least difficulty, many times through sensitive meadows and wetlands. New trail construction in the last three decades has substantially focused on relocating trails in a manner that minimizes impact to sensitive areas, even though the cost of trail construction is higher in difficult and steep terrain. The rerouting of the Cascade Crest Trail from Snoqualmie Pass to Wapatus Lake is an example. The new route follows a higher elevation and more scenic route that avoids the lower river valley routes of the original trail."

Individual NOCA-012 I

"Non-anglers may find it difficult to appreciate, but catching a trout in a remote mountain lake is a quintessential wilderness experience, akin to catching sight of a bull elk stepping into a meadow at dusk or, for some, riding horseback in the high country. Some Hi-Lakers are adamantly opposed to allowing horses in the Park but recognize that visitors wishing to ride horses or use pack animals have the right to do so, subject to Park regulations. Visitors opposed to stocking in the Park might remember that 81% of all NOCA lakes are fishless and under permanent protection, and that the Park and the WDFW will work cooperatively to ensure protection of the biological integrity of the remaining lakes." **Organization - Washington State Hi-Lakers NOCA-026 N**

"NCCC singles out only one, Visitor Experience: Anglers. Many [this is uncertain because no data are kept] anglers greatly enjoy fishing in the Complex's mountain lakes? A reduction in fish stocking would negatively affect their outdoor experience. Non-Anglers [strange name for all other users who are estimated as the vast 90% majority of users] Many [25,000 backcountry overnight users per year/ no data on day use] non-anglers are opposed to stocking the Complex. A continuation of fish stocking would negatively affect their outdoor experience. Comment: NCCC finds this a very fish centric approach. It makes the majority of users "non-anglers" and makes them the "opposition" rather than having a dominant Park visitation goal of observing pristine natural environments, knowing that natural processes are being maintained, etc." **Organization - North Cascades Conservation Council (NCCC) NOCA-028 R**

"In 1986, Bob Pfeifer and I co-authored an article on the alpine lake fishery for SignPost magazine [Gerry Erickson and Bob Pfeifer, "A Primer for High Lakes Fishing", Signpost for Northwest Trails, Vol. 21, No.6, June 1986, pps 20-25]. This article was the basis for the WDFW guide/brochure on the Washington High Lakes Fishery. In doing background research for the article, we garnered statistics on the level of participation in the high lake fishery by hikers and by the percentage of fishing license holders. The following statistics illustrate the importance of the high lake fishery:" **Individual NOCA-012 C**

"In a 1985 member survey by REI, a multiple-response question on regular activity participation showed hiking 59%, camping 58%, backpacking 43%, walking 41%, bicycling 40%, XC skiing 36%, jogging 35%, nature photography 31%, downhill skiing 31%, fishing 30%, swimming 29%, and racquet sports 22% as most popular. Participation levels less than 20% were recorded for archery, bird watching, climbing, hunting, kayaking, power boating, rafting, sailboarding, sailing, scuba diving, team sports and canoeing. Of primary interest are the REI hiking and fishing participation rates, which taken together imply that 30% of hikers fish and 17.7% of REI customers are hiking anglers." **Individual NOCA-012 D**

"While it may be appropriate to consider the continuation of sport fishing in Park and NRA lakes it is not an obligation -- particularly if it impairs park resources. NPS should specify what it means by "spectrum of visitor experiences." Conflicts among these experiences and continued fish stocking should be addressed." **Organization - North Cascades Conservation Council (NCCC) NOCA-028 M**